

CLAIMS:

1. Demodulator arranged to demodulate a first signal with the aid of a second signal, the demodulator comprising:
 - a first bandpass (30) filter arranged to recover the first signal (36) from a received signal (10) ; and
 - 5 - a second bandpass filter (32) arranged to recover the second signal (30) from the received signal (10);
in which the passband of the second bandpass filter (32) is substantially narrower than the passband of the first bandpass filter (30).
- 10 2. Demodulator according to claim 1, wherein the demodulator comprises compensation means (40,50) for compensating phase error between the recovered first (36) and second (38) signals.
3. Demodulator according to claim 2, wherein the compensation means
15 comprises a delay element (4) that is arranged to delay the recovered first signal (36).
4. Demodulator according to claim 2, wherein the compensation means comprises a phase shifter (50) that is arranged to shift a phase of the recovered first signal (36), the phase shift being dependent upon the phase difference between the recovered
20 second signal (38) and a reference signal (51).
5. Demodulator according to claim 4, wherein the compensation means comprises a selector (31) that is arranged to select the reference signal (51) from at least two
25 sources.
6. Demodulator according to claim 5, wherein the selector (31) is a programmable selector.

7. Demodulator according to claim 5 or 6, wherein one of the at least two sources is a demodulated first signal (18).
8. Demodulator according to claim 5 or 6, wherein one of the at least two source
5 is an image of a demodulated first signal (18) which is stored in memory means (35).
9. Demodulator according to claim 8 wherein, the memory means (35) comprises an analogue to digital converter arranged to provide a digital image of the demodulated first signal.
10. Demodulator according to one of the previous claims wherein the demodulator further comprises a phase locked loop (60) for stabilizing the recovered second signal (38).
11. Demodulator according to one of the previous claims wherein the recovered
15 second signal (38) is used for frequency down converting at least a third signal (73).
12. Apparatus (88) comprising a demodulator (82), the demodulator being arranged to demodulate a first signal (36) with the aid of a second signal (38), the demodulator comprising:
- 20 - a first bandpass filter (30) arranged to recover the first signal (36) from a received signal (10); and
- a second bandpass filter (32) arranged to recover the second signal (38) from the received signal (10);
- in which the passband of the second bandpass filter (32) is substantially
25 narrower than the passband of the first bandpass filter (30).
13. Method for demodulating a first signal with the aid of a second signal the method comprising the steps of:
- using a first bandpass filter (30) for recovering the first signal (36) from a
30 received signal (10);
- using a second bandpass filter (32) having a substantially narrower passband than the first bandpass filter (30), for recovering the second signal (38) from the received signal (10).